

Planning/
Policy/
System
Information

NOVEMBER 2014

Project Title:

California Smart-Growth
Trip-Generation Rates Study

Task Number: 1940

Start Date: November 3, 2008

Completion Date: March 31, 2014

Product Category: New decision-support
model and tool

Task Manager:

Scott Williams
Associate Transportation Planner
k.scott.williams@dot.ca.gov

Estimating the Transportation Impact of Smart-Growth Land-Use Projects

New methodology broadens trip-generation analysis to include non-vehicular modes of transportation for smart-growth developments

WHAT WAS THE NEED?

The California Environmental Quality Act and other state, federal, and local laws require that the transportation-related impacts of proposed land-use projects be identified, analyzed, and mitigated. The first step in preparing a transportation impact analysis is to estimate the number of trips by cars, trucks, and other modes of travel that might result from the project. Practitioners typically use trip-generation rates published by the Institute of Transportation Engineers (ITE), a national professional organization.

The ITE trip-generation rates are based on data collected primarily at suburban sites with minimal transit, bicycle, or pedestrian facilities and do not address other modes of transit. Recent studies indicate that the ITE data overestimates the number of vehicle trips for projects located in urban areas near transit and within walking distance of other land uses. By following existing guidelines, transportation engineers often over-prescribe automobile infrastructure in smart-growth locations, resulting in wider roadways, more turning lanes, and more parking spaces than necessary. In addition, adequate pedestrian, bicycle, or public transit facilities that might improve conditions for traveling are not recommended.

A commonly accepted methodology for estimating multimodal trip-generation rates associated with smart-growth projects is needed so that practitioners can more accurately estimate a development's traffic impact and recommend the appropriate transportation mitigations, including walking, biking, and transit facilities.



City Center, Oakland, CA

WHAT WAS OUR GOAL?

The goal was to create a methodology tool to estimate trip-generation rates of vehicle, public transit, and non-motorized trips associated with smart-growth and infill projects, such as those located in downtowns and other high-density, mixed-use areas.

WHAT DID WE DO?

Caltrans, in partnership with the University of California, Davis, collected trip-generation data at 30 smart-growth sites in California and used this information, along with trip-generation data from other studies, to develop a spreadsheet tool to estimate travel associated with proposed urban infill and other smart-growth land-use projects. The method adjusts the ITE rates based on the characteristics of the development project and its surrounding context.

WHAT WAS THE OUTCOME?

On average, the ITE rates estimated vehicle trips 2.3 times higher than actual counts during the morning peak hour, and 2.4 times higher during the afternoon peak travel hour. The new tool provides a more accurate estimation of vehicle trips associated with urban infill projects and the degree of vehicle-related mitigations, such as wider roads, as well as improving the estimation of appropriate facilities and services for walking, bicycling, and transit use.

Future research will address how to incorporate this methodology in the ITE Trip Generation Manual used by most traffic engineers.

WHAT IS THE BENEFIT?

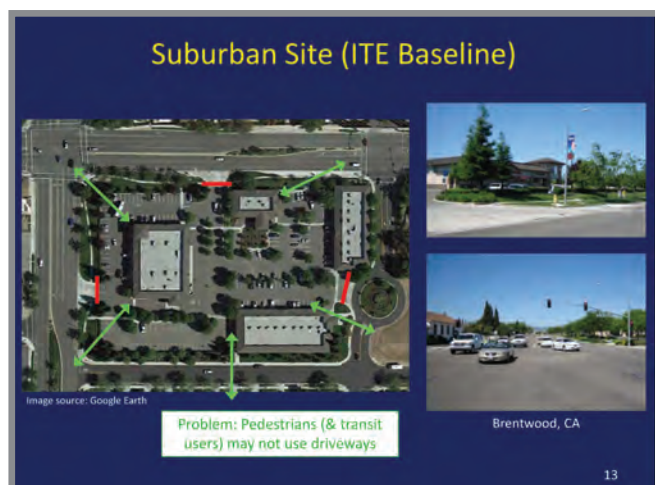
Expanding the methodology for estimating trip-generation rates to include all modes of transport—walking, bicycling, public transit, and driving—promotes smart growth and supports sustainable transportation and land-use systems. Providing the appropriate infrastructure and a more conducive environment for multimodal transportation reduces vehicular traffic, encourages walking and biking, and boosts the economic vitality of urban infill developments. The adjusted trip-generation rates guide transportation engineers to recommend facilities that improve the conditions for pedestrian, bicycle, or public transit travel.

LEARN MORE

To view the complete report and spreadsheet tool:
<http://downloads.ice.ucdavis.edu/ultrans/smartgrowthtripgen>



Collecting trip-generation data
through intercept surveys



ITE tends to emphasize measures to meet motorists' needs, which are often not appropriate for pedestrians, bike riders, and transit users.



Smart-growth sites need to take different modes of transportation into account.